United States Environmental Protection Agency

Region 10, 1200 Sixth Avenue, Seattle WA 98101

REGIONAL QUALITY ASSURANCE ANNUAL REPORT FOR FISCAL YEAR 1994 AND WORK PLAN FOR FISCAL YEAR 1995

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Prepared For The

U.S. Environmental Protection Agency
Quality Assurance Office
Environmental Services Division
Region 10

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I. QUALITY ASSURANCE ORGANIZATION AND ADMINISTRATION

Organizationally, the Quality Assurance Program is administered from the Office of Quality Assurance, & Data Management which is located in the Environmental Services Division (ESD) of EPA Region 10. In this QA Annual Report and Work Plan, the QA Program will be referred to as the Quality Assurance Office (QAO) in EPA Region 10. The function of the QAO is to help ensure that all environmental data collected under the Region's auspices are properly documented and of sufficient quality and quantity to meet regional and national program needs. This is accomplished through the implementation of Region 10's Quality Management Plan (QMP). This plan calls for the preparation and use of site-specific Quality Assurance Project Plans (QAPPs) which define data quality objectives and the means by which they will be achieved.

Ultimate authority to deal with all quality assurance (QA) matters within the Region rests with the Regional QA Manager (QAM). The QAM serves as Chief of the QAO and reports to the Director of the Environmental Services Division. QA technical staff are also on-hand and often act as a *technical liaisons* with program staff. They have also been delegated limited authority by the QAM to approve/disapprove QA plans and conduct performance and system audits of regional field and laboratory activities. A functional component of the QAO is the Regional Customer Service Office (CSO). The CSO: 1) coordinates analytical services, 2) tracks and/or documents appropriate information, 3) responds to/coordinates the response to field sample handling and analytical questions, and 4) coordinates the distribution of copied data packages and the storage of case file purges.

Identification of the regional programs and their relationship to data generation activities requiring QA are discussed as follows:

A. *AIR AND TOXICS DIVISION*

Has lead program management responsibilities for the air programs (ambient, stationary source, mobile source), pesticides (State Management Plans), toxic substances and radiation programs; managing enabling federal grants and contracts funds. The data arising from these programs are the product of efforts both internal and external to the Region.

B. *HAZARDOUS WASTE DIVISION*

Has the lead program management responsibilities for uncontrolled hazardous waste, RCRA and emergency response programs; managing enabling federal grants and contract funds. The data arising from these programs are the product of efforts both internal and external to the Region.

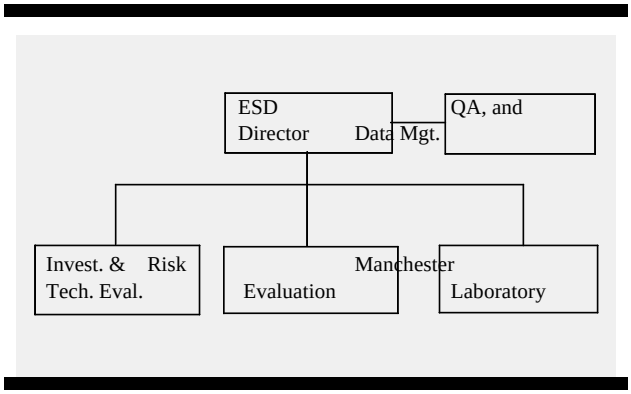
C. *WATER DIVISION*

Has the lead program management responsibilities for the public Water Supply, ambient surface and groundwater, underground injection control, estuary waters, off-shore discharge and domestic and industrial waste water treatment programs; managing enabling federal grants and contract funds. The data arising from these programs are the product of efforts both internal and external to the Region.

D. *ENVIRONMENTAL SERVICES DIVISION (ESD)*

Has management responsibilities for the regional quality assurance, air and water monitoring, risk evaluation, and laboratory programs. ESD works closely with the other divisions in the surveillance and analyses for the various air, water monitoring, RCRA, CERCLA, and pesticides and toxic substance programs.

ESD provides technical support, conducts special studies and analyzes environmental samples. The Division also processes, analyzes, reduces, reviews, evaluates and recommends the use of environmental monitoring data to the program offices. ESD overviews some State and private monitoring programs, and reviews and concurs on federal grants and contractual processes. The data arising from these programs are used on both the regional and national levels.



In Fiscal Year 1994 (FY '94), ESD reorganized resulting in the placement of QAO directly under the ESD Director. The main emphasis of this reorganization was to improve ESD's management to staff ratio, empower employees with more decision making capabilities, and increase communication and teaming efforts within the division. The primary goal of these efforts was to both streamline and provide improved services to the programs while minimizing the strain on available resources and staff. A major change in Fiscal Year 1995 (FY '95) will be the addition of two more FTEs from contract conversions.

In line with this organization, the budgeting process continues to reflect the policy of sharing resources between organizational entities within the division. ESD staff are therefore given opportunity and latitude to participate in intra-divisional teaming activities that they would not normally support. While each responsibility center is required to monitor staffing and expenditures, budget distributions (other than FTEs) for the fiscal year reflect a projection of anticipated expenditures as opposed to direct allocations. Staff allocations and projected travel resources for the QA Office for FY '95 are given below:

Travel Funds	"A" Appropriation $3,500 "T" Appropriation $13,000
Staffing	15 FTE's

In order to promote teaming and to utilize the best qualified 'experts', several people in the Region have QA responsibility in addition to the QAO. These individuals, identified as Quality Assurance Coordinators (QAC), primarily from the ESD, have expertise in specific areas such as air, water, drinking water laboratory certification, biology, microbiology, field activities and data processing. The QAM has the authority to request assistance from the QACs on QA matters related to their area of expertise. Upon request, the QACs function

as part of the QAO. The efforts of the QACs total approximately two person work years.

Also, of major importance to the credibility and effectiveness of the QAO is the close working relationship established with the Regional Office of Suspension and Debarment. The QAO has provided technical assistance in the development of legal responses to cases of fraud, waste and abuse by laboratories participating in the Agency's Superfund Contract Laboratory Program.

II. STATUS OF REGION 10 QUALITY MANAGEMENT PROGRAM (QMP)

Region 10's revised Quality Management Program Plan (QMPP) was endorsed during FY '93 to reflect the reorganization of both ESD and the Region and to incorporate additional policy statements by the QAO. While no policy or procedural changes have been made since it's endorsement, organizationally the QAO has been elevated to report directly to the ESD Director. A review of the QMPP shows that it still meets the Region's management and program needs for the next fiscal year. Building on progress made since 1979, Region 10's QMP is gaining increased acceptance by regional monitoring programs.

During FY '94, Region 10 incorporated the QA requirements imposed by the Financial Assistance Regulations into Region 10's State/EPA Agreements. As a result of this process, each State has developed an approved Quality Management Program and there has been a heightened sense of awareness of the importance of QA matters in most State monitoring programs. The QAO will continue to work with the State monitoring programs to assess, where applicable, the effectiveness and implementation of their QA programs.

Emphasis in FY '95 will be to continue improving regional data generation and support activities by enhancing communications with the monitoring programs through the Regional Customer Service Office. In addition, the QAO will no longer solicit data review support from the Superfund Environmental Service Assistance Team (ESAT) contractor and will hire one additional chemist to provide this support. The QAO also plans to take a pro-active stance in the initiation of corrective actions by providing assistance to the State Monitoring Programs where deficiencies in their QA Programs have been identified.

Major data collection projects scheduled for FY '95 requiring QA and ESD resources include the Columbia River Basin Fish Consumption Survey, Shoalwater Tribe Survey, Willipa Bay Survey, Lower Snake River Survey, and the Coastal REMAP Surveys. ESD also plans to provide the Regional Programs with its continued level of effort of on-site laboratory and field system audits and inspections.

III. REGION 10 QUALITY MANAGEMENT POLICY

It is the policy of Region 10 that there shall be sufficient Quality Management activities conducted with the Region to ensure that all environmental data generated and processed shall be: scientifically valid, of adequate statistical quantity, of known precision and accuracy, of acceptable completeness, representativeness, and comparability, and where appropriate, legally defensible. Specifically, Regional policy shall comply with EPA Order 5360.1, and require the documentation of intended data uses, the establishment of appropriate data quality objectives to ensure the utility

of data for its intended use, and the development and implementation of a Quality Assurance Project Plan (QAPP).

A. *DATA QUALITY OBJECTIVES*

Data Quality Objectives (DQOs) are estimates of the data quality necessary to achieve a prescribed application. DQOs embrace the five attributes which define the quality-property or character of data and the standard checks and balances that any scientific discipline uses to evaluate and validate data. The QAO has developed regional DQO guidance and is continually providing integrated training on how to develop achievable DQOs and document them in workable QA plans. This guidance has been incorporated into Region 10's program-specific QA guidance manuals.

B. *QUALITY ASSURANCE PROJECT PLANS*

QA Project Plans must be prepared by all regional monitoring programs, contractors, grantees, or other responsible organizations. Completion, review, and acceptance of these plans is a prerequisite for issuance of sample numbers and scheduling of analyses by the regional laboratory, any CLP laboratories, or other facilities. This plan will express, in specific terms, the data quality objectives and the requisite procedures, responsibilities, functional activities, and specific QA and Quality Control (QC) activities necessary to achieve the data quality objectives of each project.

Recognizing that the development of such a plan is a significant undertaking, the QAO has prepared program-specific QA guidance manuals that provide explicit instructions for preparing QA project plans. These manuals have facilitated the smooth and timely preparation of comprehensive and acceptable QA project plans.

The QAO has assisted in the development and review of 166 site-specific QA project plans during FY '94. By working closely with the EPA Project Managers, the QAO has been able to assist in the development of comprehensive and realistic QAPPs. These are fast track efforts which have resulted in the development of more precise data quality objectives (DQOs) for the site, and the understanding of the importance and use of DQOs by the involved participants, such as field and laboratory contractors, Principle Responsible Parties (PRPs) and their contractors, and State and Local Agencies.

The approximate average number of days to review all plans was from 6 to 10 days. The plans submitted to the QAO for review and approval were distributed amongst the Divisions as follows: Air and Toxics - 24, Water - 46, Hazardous Waste - 94, and Criminal - 2. Implementation of these project plans has resulted in a noticeable and substantial improvement in the overall quality of data generated by the Region.

IV. QUALITY ASSURANCE AUDITS

A major objective of Region 10's QA program is to work with the regional programs, State and local agencies, and other interested organizations to improve their data generation and QA programs. This involves routinely reviewing and assessing the QA programs of environmental monitoring and measurement activities within the region. The program includes both on-site field and laboratory system audits and inspections, data audits, and analytical performance evaluations. The purpose of these audits is to assess and enhance each program's capability by recommending corrective measures and provide training where appropriate.

A. *ON-SITE SYSTEM AUDITS*

1. NAMS/SLAMS

In FY '94 the Air Characterization Section of ESD conducted 65 NAMS/SLAMS site audits in Washington and Idaho. Alaska, Oregon, and the remaining Idaho sites are expected to receive on-site evaluations during FY '95. The distribution of FY '94 site audits is given below:

	O_3	CO	TSP/Pb	PM_{10}	SO_2
Washington	7	14	2	23	9
Idaho	0	0	0	9	**1**

2. Multi-Media

As part of the Multi-Media Inspections, ESD staff performed seven inspections, which included a determination of compliance with the SDWA, FIFRA, UST, RCRA, TSCA, SPCC, Air, EPCRA, UIC and NPDES Programs. ESD coordinated these efforts with support from NEIC, State Operations Offices, and various State Agencies.

3. NPDES Compliance Inspections

In FY '94, ESD conducted 34 water compliance inspections; four of which were classified as Multi-Media Inspections. These inspections included evaluations of monitoring locations, sample collection, flowmeter verifications, sample compositor operation, analytical procedures, data calculation and documentation. The purpose of these audits is to determine compliance with permit requirements. Reports are issued to the Waste Water Management and Enforcement Branch for their review or action.

4. Air Compliance Inspections

ESD conducted 18 air compliance inspections during FY '94 of which eight were performed with Multi-Media inspections. These inspections included evaluations for asbestos (NESHAP), source test, source operation, continuous monitoring programs; best available control technology and lowest achievable emission rates for PSD and air permit activities. These audits are conducted in accordance with both Air Permit

and/or Compliance requirements. Reports are issued to the Air and Radiation Branch for their review or action.

5. PCB Inspections

Under the TSCA Investigation program, ESD personnel conducted 22 PCB inspections during FY '94 of which seven were classified as Multi-Media.

6. RCRA Inspections

ESD personnel involvement for RCRA inspections was limited to the coordination of six inspections during FY '94. All of the RCRA inspections conducted in FY '94 were performed as Multi-Media inspections.

7. Criminal Investigations

Two sampling events were performed for the Office of Criminal Investigations during FY '94 by ESD personnel.

B. *LABORATORY SYSTEM AUDITS*

1. State Laboratory Audits

During FY '94, ESD conducted an on-site technical and management systems evaluation on the Oregon State Department of Environmental Quality Laboratory located in Portland, Oregon. This evaluation was conducted under the requirements of the Safe Drinking Water Act, NPDES and Water Monitoring Programs, Air Monitoring Program and Superfund and RCRA Hazardous Waste Programs. Problems that were identified revealed deficiencies in the implementation of their Quality Management Plan resulting from a recent reorganization of the agency.

2. Hazardous Waste Laboratory Audits

ESD and QAO staff conducted four on and off-site laboratory system audits in support of superfund. The use of BSRMs was also included as a single blind QC sample during an on-site lab visit. Superfund Contract Laboratory Program system evaluations were not conducted during FY '94.

3. Water Laboratory Audits

QAO staff conducted three laboratory audits in support of the NPDES Programs. ESD staff also conducted 15 laboratory drinking water certification audits for both the State Agencies and private laboratories located in Washington, Oregon, and Alaska.

4. Air Laboratory Audits

One unannounced air laboratory audit was conducted during FY '94 in conjunction with the State of Oregon Laboratory Audit mentioned previously. No major deficiencies were noted during this review.

5. Suspension and Debarment Investigations

At the request of the Office of Suspension and Debarment, ESD personnel provided technical support on a facility investigation. Investigations such as these stress the importance of ethical conduct at all levels within facilities that generate environmental monitoring data for EPA.

The monitoring programs scheduled for technical system audits by QAO during FY '95 are as follows:

Programs	Projects	Approx. No. of Audits	Estimated Cost
Air/Toxics	NAMS/SLAMS	0 (lab)	$0
Air/Toxics	NAMS/SLAMS	98 (field)	$8000
Water	DW	2 (state lab)	$3000
Water	NPDES	2 (state lab)	$2000
Hazardous Waste	RCRA	2 (state lab)	$2000
Hazardous Waste	RCRA	1 (field)	$500
Hazardous Waste	CERCLA	5 (lab)	$1000
Hazardous Waste	CERCLA	5 (field)	$1000
Hazardous Waste	CERCLA	1 (state lab)	$1000

Audit dates during FY '95 will be determined by the appropriate program managers. Completion of audits will depend upon whether sufficient travel and operational resources are available. The State laboratory scheduled for a technical system audit in FY '95 is the Alaska Department of Environmental Conservation Laboratory, in Juneau, Alaska.

C. *DATA AUDITS*

The Region 10 QAO routinely conducts both completeness audits of laboratory data package purge files (original documentation) and data quality reviews. Completeness audits are evidentiary in nature and are designed to detect missing information and/or originals necessary in the event the data package is submitted in court as evidence. FY '94 represents the third complete fiscal year that Region 10 has been conducting these audits. During this year, 116 data packages were reviewed, copied for technical review and archived under custody.

The QAO performed 77 data quality reviews and assessments during FY '94. These data package evaluations were performed to assess data quality, useability and defensibility for the Air, Water, and Hazardous Waste Programs. Findings revealed that data quality ranged from data being suspect and unusable to acceptable. The majority of data deficiencies

resulted from insufficient documentation. It is anticipated that project managers will request continued support for the assessment of data quality in FY '95.

D. *PERFORMANCE EVALUATIONS*

1. Water Supply and Pollution Control Programs

The Performance Evaluation (PE) Studies are vital for Regional oversight of State and Private laboratories; the WS Studies are used for drinking water laboratory certification by both EPA and the States; the WP and DMR QA Studies are used for waste water laboratory programs by EPA Region 10 and State agencies. These studies are the most cost effective way to make some judgement of the capability of the laboratories which produce most of the data used by the Water Programs for enforcement and monitoring. Continued funding for these PE Studies is needed.

The analytical performance of the EPA, Contract, State and private NPDES and Drinking Water laboratories were assessed through the EMSL-CI and Environmental Monitoring and Support Laboratory in Las Vegas (EMSL-LV) semi-annual performance evaluation studies. The following table is a summary of the analytical performance results of both the regional and other nation-wide laboratories which participated in the two most recent water supply and water pollution studies.

PERCENT ACCEPTABLE DATA

Laboratory	Water Supply		Water Pollution		Microbiology	
	WS034	WS033	WP032	WP031	WSM24	WSM23
Region 10 Lab	*	93	100	94	*	100
All EPA Labs	*	91	*	97	*	99
Region 10 State Labs	*	89	97	94	*	100
All State Labs	*	88	*	93	*	99
Region 10 Private Labs	*	87	91	87	*	97
All Private Labs	*	83	*	83	*	97

* Data from these studies are late and have not been received by the Region.

In general terms, EPA and State laboratories exhibit better performance in comparison to the private laboratories they oversee. Also in FY '94, EPA Region 10 submitted continuing *"Special Requests"* to EMSL-CI for laboratories, who were otherwise not eligible, to participate in the WSM23 and WSM24 (Microbiology) PE studies.

2. Discharge Monitoring Performance Audits

The Discharge Monitoring Report (DMR) and QA Performance Evaluation studies

have become an affective and integral component of the Region and State permit compliance programs. The Region is placing increased emphasis on the DMR as a major focal point for the initiation of compliance and enforcement actions. The QA audits serve to establish the only quantitative basis from which the accuracy of all major NPDES permittees analytical performance can be assessed. Corrective action is taken by each laboratory to correct deficiencies identified through these performance evaluation studies. The success of this program is illustrated by the improvement in the Regional and National Summary of data for the past several years.

PERCENT ACCEPTABLE DATA

Permittees	DMR-QA Studies					
	#14		#13		# 12	
	Chem + Tox	% Tox Rpt.*	Chem + Tox	% Tox Rpt.*	Chem + Tox	% Tox Rpt.*
Regional Level	**	**	92	61	89	61
National Level	**	**	95	77	90	72
Alaska	**	**	84	50	91	25
Idaho	**	**	91	54	86	56
Oregon	**	**	93	88	90	78
Washington	**	**	95	48	90	56

* % Tox Rpt.: This represents the percentage of permittees reporting Tox data. These do not represent "levels of acceptability". Additionally, the levels of acceptability have only been made available for combined Chemical and Tox results. Tox has been defined as "Percent of discharge that is lethal to the organism".

** Data from this study are late and have not been received by the Region.

3. Air Monitoring Performance Audits

State Air Monitoring Programs in Region 10 routinely participate in audits at several organizational levels to assess their ability to successfully measure pollutant concentrations. These audits are conducted internally by the State on a quarterly basis and externally by the Region on an annual basis. State performance at each of these levels are generally good to excellent, with isolated and minor exceptions.

The monitoring programs scheduled to participate in Region 10's analytical performance evaluations during FY '95 are as follows:

Program	Project	Number of Audits	Number of Analyses[1]	Frequency of Audits[2]	Source of Materials
Air	NAMS/SLAMS	75/yr	1	semi-annually	EMSL/RTP[4]

Air	Source Monitoring	4/yr	6	semi-annually	EMSL/RTP
Water	DMR-QA	255/yr[3]	26	annually	EMSL/CI
Water	NPDES	250/6 mo[3]	1 - 149	semi-annually	EMSL/CI
Water	DW	88/6 mo[3]	111	semi-annually	EMSL/CI
Water	Microbiology (WSM)	14/6 mo	84	semi-annually	EMSL/CI
Water	Microbiology (Special Req.)	94/6 mo	84	semi-annually	EMSL/CI
Haz. Waste	CERCLA	1/yr	5	semi-annually	EMSL/CI
Haz. Waste	RCRA	1/yr	5	semi-annually	EMSL/CI

[1] Constitutes the maximum determinations per audit.
[2] Performance audits dates will be established by EMSL and NEIC.
[3] Complete test results for the FY '94 WS, WP, and DMR-QA studies have not been received.
[4] EMSL-RTP = Environmental Monitoring and Support Lab - Research Triangle Park, NC

V. QUALITY ASSURANCE OFFICE TRAINING AND ACTIVITIES

The courses, seminars, technical meetings and various activities presented or attended by the QAO during FY '94 are as follows:

A. *TRAINING PROVIDED*

1. A presentation on QA requirements relative to State Management Plans was provided at the Annual Western States Pesticide Conference.

B. *TRAINING RECEIVED*

1. Statistics for Assessing Environmental Measurements, provided by Dr. L. Conquest, Associate Dean, University of Washington.

2. Data Quality of High Resolution GC/MS Dioxin/Furan analysis provided by Dr. F. DeRoos, Huntington Laboratories, Minneapolis, Minnesota.

3. Inspector Training, provided by the Regional Engineering & Investigations Section, ESD.

C. *OTHER ACTIVITIES*

1. Assisted in the preparation of the USEPA/Alaska Interagency Agreement.

2. Attended Annual QA Managers Meeting.

3. Frequently met with program managers and project officers in order to gain an understanding of their needs and to provide them assistance in both technical areas as well as areas of QA.

4. Participated in a number of project teams in areas of Risk Based Studies, TMDL studies and Community Involvement Forums.

5. Continued the use of Regionally prepared site specific contaminated materials as

blind or double-blind reference samples.

VI. IDENTIFIED NEEDS

Based on discussion with QAO and involved ESD personnel, it would be appreciated if the following list of priority topics be made available for training in FY '95:

1. Current laboratory sample preparation and analytical techniques.

2. Field sample (soil and sediment) collection and holding time requirements.

3. Advanced auditor training workshop.

VII. IMPLEMENTATION SCHEDULE

Listed below is a tentative schedule of QA activities necessary to satisfy FY '95 Headquarters QA program requirements and the Regional QA objectives described throughout this report. Progress of these activities will be reported to the ESD Director.

Activities	Completion Date
Revise Regional QA Plan to reflect HQ requirements	Within 30 days of receipt
Review/Approve QA Project Plans for all Monitoring Projects	Within 10 days of receipt
Develop on-going QA project plan for State pesticide field monitoring activities	June 1995
Update Regional Audit Manual	September 1995
Conduct Audits identified previously (PE audits and technical system audits)	Per Schedule in audit section*
Prepare QA annual report and Work Plan to Regional and Headquarters Management	October 1995

* Proposed audit schedules are identified in the QA Audit Section.